

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)	
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HALLER)	Art Unit: 3632
)	
Application No. 10/812,833)	Examiner: Alfred J. Wujciak
)	
Filed: March 30, 2004)	Confirmation No. 3114
)	
FOR: DEVICE AND METHOD FOR)	
SPRINGING A VEHICLE SEAT)	

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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March 8, 2010

Sir:

This is a Reply Brief in response to the Examiner's Answer mailed January 7, 2010.

In view of this brief, the Appellant respectfully requests reversal of the rejections and allowance of the pending claims.

ARGUMENTS

The examiner continues to take the position that Kurabe anticipates claim 1 of the present application. He states that "the appellant's invention requires compression to switch the location of air from one place to another." (Examiner's Answer, page 6, second paragraph.)

While air pressure may certainly differ in the air spring (Appeal Brief, figure A, item 2) and the volume of contained air (item 1) when the valve is opened, until the air pressure is equalized in both containers, there is no introduction of outside air by a compressor (or exhaust of air into the atmosphere) in the working of this aspect of the present invention. Kurabe specifically shows a source of compressed air (74) for introduction into the air spring (34). This is an important distinction that the examiner continues to ignore.

A change of the spring rate happens in the case of present invention only by switching on and switching off the additional volume. The volume of air in the air spring and the additional volume may be added or exhausted at the start in order to adjust the seat level with regard to the weight of the driver, but the volume of air is kept constant for all operations and actions during the following seat adjustments and changes of the spring rate. That is, that in the case of the present invention, no air is added or is discharged from to or from the outside atmosphere when the change of the profile of the force-path spring rate, which is the core of the invention,

changes. The compression of the air in defined operation areas is reached only by switch off (valves closed) of the additional volume. Therefore, the present invention is a closed system.

This may be better illustrated on the attached page of drawings. For each of the five figures, the force v. distance graph is shown on the left, and a schematic illustration of a seat support is shown on the right. The seat is capable of moving up and down on the scissors support. Air spring with pressure P_1 acts as a resistance to the weight of the seat and a driver sitting on the seat. The additional air volume, having pressure P_2 , is shown attached by an air passage through a valve, which may be automatically opened or closed depending on the seat position. The top figure shows the seat in a middle (comfort) position. The valve is open at this location, so both the air spring and the addition volume are in communication, and therefore $P_1 = P_2$. In the second figure, the seat moves down to a more extreme position where the valve is closed. Just at this point, P_1 is still equal to P_2 . However, as shown in the middle figure, the seat has moved further downward, and P_1 become greater than P_2 , because the additional air volume is no longer in fluid communication with the air spring, which is now being further compressed, causing its pressure to increase independent of the pressure in the additional volume of air. This resistance will also cause the seat to move back upwards, as shown by the arrow in the middle force/distance diagram. The fourth diagram shows the seat returning to the location shown in the second diagram. Because of this, the pressures P_1 and P_2 will normally equalize and the valve reopens. This opening of the valve connects the additional volume of air to the air spring, and the larger volume of air to be compressed means that the force overcoming seat

movements will be less, as shown in the movements illustrated by the last force/distance diagram, making for a more comfortable ride when the seat is in the normal range.

Kurabe uses externally supplied or discharged air, in order to reach a higher spring rate (for compression of the air). As a result, the volume of air in the spring is increased for the time period of passing any switch points (e.g. springing movement downwards). At the following oscillation quieting downwards, air volume overload must be discharged from the system. Kurabe does not provide an additional volume of air, as shown and claimed in the present invention. Therefore, Kurabe is an open system.

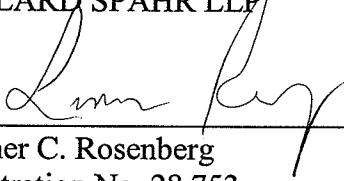
Therefore, it is respectfully submitted that claims 1 and 11 are patentable over Kurabe and that these claims should be allowed. Since the remaining claims 2-10, 12, 13 and 15 are dependent either directly or indirectly from one of these claims, all claims should now be allowed.

No fees are believed to be due. However, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

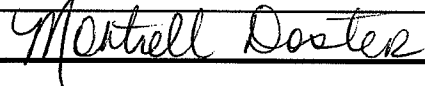
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Respectfully submitted,

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